

Russia 'drills into' Antarctic subglacial lake

February 6 2012, by Maria Panina



Giant icebergs surrounded by Antarctic ice floe in Vincennes Bay. Russian researchers say they have succeeded in drilling through four kilometres (2.5 miles) of ice to the surface of a sub-glacial Antarctic lake which could yield important scientific discoveries.

A Russian team has succeeded in drilling through four kilometres (2.5 miles) of ice to the surface of a mythical subglacial Antarctic lake which could hold as yet unknown life forms, reports said Monday.

Lake Vostok is the largest subglacial lake in Antarctica and scientists want to study its eco-system which has been isolated for hundreds of thousands of years under the ice in the hope of finding previously unknown microbiological life forms.

"Our scientists completed drilling at a depth of 3,768 metres and reached the surface of the subglacial lake," an unnamed source told Russian state

news agency RIA Novosti.

Sergei Lesenkov, spokesman for the Arctic and Antarctic Scientific Research Institute, told AFP in Moscow that there was the possibility of a "fundamental scientific development".

Lesenkov said that analysis of the composition of gas bubbles discovered in the ice above the lake could help climate change research.

"Because the lower layer was formed 400,000 years ago, from the composition of the gas it is possible to judge the gas composition in the atmosphere 400,000 years ago and during the time that has passed since the formation of the lake," he said.

"From there, it is possible to identify and forecast certain climatic changes in the future. This is very important."

No official announcement of the breakthrough has been made, although sources said that this was expected to come from the government.

"If it is true and it's successful, it's a milestone that's been completed. This is a major achievement for the Russians because they've been working on it for years," Professor Martin Siegert, head of the school of geosciences at the University of Edinburgh, told AFP.

He said that exploring environments such as Lake Vostok would allow scientists to discover what life forms can exist in the most extreme conditions and thus whether life could exist on some other bodies in the solar system.

There has long been excitement among some scientists that life theoretically could exist on Saturn's moon Enceladus and the Jupiter moon Europa as they are believed to have oceans, or large lakes, beneath

their icy shells.

Valerie Masson-Delmotte of the climate and environment laboratory at the French Atomic Energy Commission, said Lake Vostok was of particular interest as it had been formed over the course of 400,000 years.

"There is also a strong interest from biologists to study the forms of life that could exist in these extreme conditions which have been separated from the rest of the world environment for several million years," she said.

RIA Novosti said that the possibility that the lake existed had first been suggested by a Soviet scientist in 1957. Scientific research drilling in the area started in 1989 and the lake's existence was confirmed only in 1996.

But efforts to reach its surface were suspended two years later amid fears that the process could contaminate the waters.

After developing new techniques in an attempt to ease environmental concerns, attempts to drill down through the deep ice sheet to the lake's surface resumed.

The Russian researchers intend to start drilling again and obtain water samples from the lake for analysis in December after a ten-month break due to harsh weather conditions.

The hidden lakes of the Antarctic are seen as one of the final frontiers in exploring the Earth and several teams from other nations are also engaged in similar projects.

There is still controversy over the methods used by Russia, with Western scientists expressing concern that the kerosene that has been used to

prevent freezing ice from closing the borehole risks contaminating samples.

Siegert will lead a mission next year to drill into another subglacial lake in west Antarctica called Lake Ellsworth, using a different technique called hot-water drilling.

(c) 2012 AFP

Citation: Russia 'drills into' Antarctic subglacial lake (2012, February 6) retrieved 2 May 2024 from <https://phys.org/news/2012-02-russian-scientists-isolated-subglacial-lake.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.